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## **ABSTRACT**

A plan is a relaxation of the production management problem with time buckets: no precise lead times, no exact continuous balance of material. A schedule considers the full production management problem with all of the details. The present invention includes methods and systems for modeling plans and schedules and methods and systems for communicating between the planning and scheduling models. Bidirectional communication may be carried out between the planning model and the scheduling model to enable, for example, the planning model to be used as a hint during scheduling and to enable a new plan to be launched in the middle of a scheduling algorithm to update the results thereof.